

stances that its does not so readily part with its oxygen, and it forms an insoluble compound with organic structures which acts as a preventive to its continuous powers as a caustic, by forming a sort of impermeable coating on the tissue to be removed. I am aware that this action is an advantage where hemorrhage is to be feared.

"The exsiccated sulphate of zinc and copper, when employed as caustics, act like chloride of zinc by their powerful affinity for water. But when the *vis vitæ* is destroyed by such affinity, their further action is that of strong antiseptics, thereby greatly, if not entirely, retarding the natural disruption of tissues which have ceased to possess vitality. Bichloride of mercury, and in fact, all mercurial caustics possess a conservative action by their strong affinity for the albuminous components of organic structures with which they form compounds of definite character.

"Nitric and sulphuric acids belong to the class of destructive caustics; the action of the former is that of the oxidation of the tissues, while the latter owes its power as a caustic to its power of extracting the elements of water from organized bodies, behaving like the exsiccated salts previously mentioned, with which it is sometimes judiciously combined to prevent the spreading of the acid beyond the parts to be destroyed by reason of its fluidity when uncombined.

"Chloride of gold has been extensively employed generally in combination with other caustics in some of the continental hospitals. When placed in contact with organic matter, this salt is reduced to a metallic state similar to the action of nitrate of silver; but as far as my experience goes, it is inferior as a caustic to the silver salt, because of the large quantity of oxidizing material which is set free when the organic matter is treated with nitrate of silver. Among the conservative caustics, arsenic and its compounds will find its proper class; for although arsenic is poisonous to living tissue, it is a powerful antiseptic agent. It forms no combinations with dead or living tissue, and only a feeble one with albuminous matter; and from this cause it must be regarded in a chemical point of view as a very inefficient caustic.

"Chlorides of antimony and iron, which have been used as caustics, exhibit a mode of action similar to chloride of zinc. The very feeble action of the latter must in some cases be its principal recommendation.

"It will be evident from the previous statements that chemistry will supply us with an indefinite number of caustics; for it is clear that whatever decomposes or combines with living tissue sufficiently to kill, it is, to all intents and purposes, a caustic. It is also equally manifest that, while it is the essential condition of every substance professing to be a caustic, it should kill the living tissue, it by no means follows that all caustics performing this condition should destroy or dissolve away, as it were, the tissue when no longer possessing life, for this latter property belongs to a distinct class of caustics."—*Med. Times and Gaz.*, April 10, 1858.

13. *New Caustic Pencil, modifying the tissues in different degrees.* Double Salt of Nitrate of Silver and of Soda.—M. BRUN, in the *Gazette Médicale de Lyon*, proposes the use of the above double salt in varying proportions, in order to obtain the modifying, in contradistinction to the caustic or destructive, effects of nitrate of silver upon the tissues in cases in which it is necessary to confine this action to a circumscribed point, as, for example, in chronic inflammation of the urethra, where the disease is localized, as in irritations of the prostatic region, in spermatorrhœa, neuralgia of the neck of the bladder, &c., in which injections would irritate the surrounding sound parts, and consequently dispose to an extension of the evil. For this purpose, he has had pencils prepared of nitrate of soda and nitrate of silver, in varying proportions.

The following is the process adopted by M. Livernay, pharmacien, in the manufacture of the pencils: Dissolve, on the one hand, a portion of nitrate of silver in a sufficient quantity of distilled water; on the other, a portion of nitrate of soda in a like quantity of water; mix these two solutions, and evaporate them to dryness. Place the residue in a capsule, and heat until it be fused; then pour the product into the mould, previously warmed and

greased. When cold, a cylinder is obtained, representing a double salt of nitrate of silver and of soda.

This double salt is of a pearly-gray colour, if each of the salts employed was pure; it acquires a brown and blackish tint if the fusion was too long continued, whether in consequence of the reduction of a small quantity of silver, or of the action of the fatty matter with which the mould was smeared.

The nitrate of silver and soda presents a crystalline and radiated fracture. It is very soluble in water and in boiling water. It is not more brittle than nitrate of silver, and it is more easily cast. Generally speaking, it presents the same characters.

These two salts may be combined in the most varied proportions.

M. Brun has used this double salt with much advantage for touching aphthæ of the mouth, for smearing the glans in cases of balanitis, and for applying to a localized inflammation of the lower eyelid. He sums up its advantages in the following propositions:—

1. It better fulfils the object of the practitioner where only a modification of the tissues is desired.
2. Its action may be increased or diminished by varying the relative proportion of the two component salts.
3. It is more easily manipulated.
4. In no case is its use attended with danger.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *Contribution to the Etiology of Continued Fever; or an Investigation of the Various Causes which Influence the Prevalence and Mortality of its Different Forms.*—This is the title of a paper read before the Royal Medical and Chirurgical Society by Dr. MURCHISON. The materials consisted principally of an analysis of 6628 cases of continued fever which had been admitted into the London Fever Hospital in the ten years during which the distinctions had been recorded between typhus, typhoid, relapsing fever, and febricula. The results thus arrived at were compared with the statistical data which the author had obtained from many of the principal hospitals in England, Scotland, and Ireland, and from various published records. The following are the conclusions of the author:—

1. Typhus and relapsing fever occur at irregular intervals, and often simultaneously, as wide spread epidemics. They then gradually disappear, and both of them, but especially the latter, may be absent for years from those places where, during the epidemics, they are usually the most prevalent.

2. Typhoid fever does not occur in such wide-spread epidemics. In certain places it is never absent, and its prevalence varies but little from year to year. When outbreaks of it occur in other situations, these are always of the most local and circumscribed character.

3. Typhus and relapsing fever are quite independent of the season of the year, whereas typhoid fever is almost invariably most prevalent during the autumn, and it has been observed to be especially prevalent in seasons remarkable for their high temperature.

4. Sex has no influence over the prevalence of continued fever, nor over that of any of its forms.

5. Typhoid fever is pre-eminently a disease of childhood and adolescence, at which periods of life we know that there is a marked proneness to enteric affections. Less than one-seventh of the cases of typhoid fever are above 30 years of age. Typhus and relapsing fever exhibit no such predilection for youth. Of typhus one-half, and of relapsing fever one-third, of the cases are above 30.